

HIGH-CAPACITANCE COLLOID ELECTROLYTE AND PREPARING PROCESS THEREOF

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Abstract of CN1056019

This colloid electrolyte contains such components (wt.% and taking colloid electrolyte as 100) as silica sol (3-9.9, counting by SiO₂) and sulfuric acid (48.1-75). The ratio (g/g) of sulfuric acid to SiO₂ is 4.5-10.6. It also contains aluminium hydroxide (0.1-0.5, counting by Al₂O₃) for increasing its capacitance. Its preparing process is to simultaneously drop silica sol and sulfuric acid into reactor. Resultant colloid electrolyte features not hydrating, not cracking and high capacitance up to 91.6%, and is suitable for the silica gel lead-acid accumulator for high-power start.

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English translation of CN1056019A**Abstract**

A high capacity colloid electrolyte is provided. The colloid electrolyte contains (wt%, based on the colloid electrolyte) 3-9.9% silica sol (in terms of SiO_2) and 48.1-75% sulfuric acid. The ratio of sulfuric acid/ SiO_2 (g/g) is 4.5-10.5. The colloid electrolyte also contains 0.1-0.5 aluminium hydroxide (in terms of Al_2O_3) to increase the capacity. The preparation process thereof is to simultaneously drop silica sol and sulfuric acid into the reaction vessel, which method is easy to implement with low cost. The resulted colloid electrolyte features not hydrating and not cracking with the capacitance up to 91.6%, and is suitable for the silica gel lead-acid storage battery for high power start.

Claim 4

A process for preparing a high capacity colloid electrolyte, wherein adding silica sol having a silica particle surface area of 150-250 m^2/g and sulfuric acid under continuous stirring, so that the resulted colloid electrolyte contains (wt%, based on the colloid electrolyte) 3-9.9% silica sol (in terms of SiO_2), controlling the reaction temperature to be 20-50°C and cooling for 1-4 hours with continuous stirring until the temperature of the reaction mixture colloid electrolyte being 30°C or less, discharging the resulted colloid electrolyte, the process being characterized in that, the colloid electrolyte contains (wt%, based on the colloid electrolyte) 48.1-75% sulfuric acid and dropping the silica sol and sulfuric acid simultaneously into the reaction vessel.

Claim 6

A process for preparing a high capacity colloid electrolyte according to claim 4, characterized in that, adding silica sol and sulfuric acid so that the colloid electrolyte contains 3-9.9% silica sol (in terms of SiO_2) and 48.1-75% sulfuric acid, and the ratio of sulfuric acid/ SiO_2 (g/g) is 4.5-10.5.